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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750.814	01/05/2004	Soichi Yamazaki	247267US2S	2850

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314		

EXAMINER	
SANDVIK, BENJAMIN P	

ART UNIT	PAPER NUMBER
2826	

NOTIFICATION DATE	DELIVERY MODE
07/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/750,814

Applicant(s)

YAMAZAKI ET AL.

Examiner

Ben P. Sandvik

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 10-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/5/2004, 11/13/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of claims 1-9 in the reply filed on 5/2/2007 is acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshiyama et al (U.S. PG Pub #2002/0179951), in view of Arita (U.S. Patent #6291290).

With respect to **claims 1, 4, and 6-9**, Yoshiyama teaches a capacitor comprising a lower electrode (Fig. 1, 2b) provided above a substrate (Fig. 1, 1), a capacitor insulating film selectively provided on the lower electrode (Fig. 1, 3a), and an upper electrode selectively provided above the lower electrode so that the capacitor insulating film can be interposed between the upper and lower electrodes (Fig. 1, 4); an interlayer insulating film provided above the substrate to cover the capacitor and the electrode protection film (Fig. 1, 8); an upper layer interconnect wire for the lower electrode provided on the interlayer insulating film (Fig. 1, 9B), and electrically connected to the lower electrode via a lower

electrode plug provided in the interlayer insulating film (Fig. 1, 7B); and an upper layer interconnect wire for the upper electrode provided on the interlayer insulating film (Fig. 1, 9C), and electrically connected to the upper electrode via an upper electrode plug provided in the interlayer insulating film (Fig. 7D); but does not teach an electrode protection film formed of oxide conductors containing at least one of metal elements such as Sr, Ti, Ru, Ir and Pt, and provided to cover the upper surface of the upper electrode. Arita teaches a capacitor having a top electrode comprising two layers (Fig. 1, 104a and 104b); the top layer containing at least one of metal elements such as Sr, Ti, Ru, Ir and Pt (Col 6 Ln 20-24). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a second layer containing at least one of metal elements such as Sr, Ti, Ru, Ir and Pt on the top electrode of Yoshiyama as taught by Arita in order to create a top electrode which is free from metal diffusion problems (Col 3 Ln 39-45).

With respect to **claim 2**, Yoshiyama teaches an interlayer insulating film of silicon oxide (Col 3 Ln 66) and Arita teaches an electrode protection film of Ru, ruthenium oxide, or iridium oxide (Col 6 Ln 24). These materials are disclosed in the specification of the instant application as having properties such that the processing rate of Ru, ruthenium oxide, or iridium oxide is 25% or less with respect to silicon oxide.

With respect to **claim 3**, Yoshiyama teaches an interlayer insulating film of silicon oxide (Col 3 Ln 66) and Arita teaches an electrode protection film of Ru,

ruthenium oxide, or iridium oxide (Col 6 Ln 24). These materials are disclosed in the specification of the instant application as having properties such that etching rate of Ru, ruthenium oxide, or iridium oxide is less than silicon oxide.

With respect to **claim 5**, Yoshiyama teaches an interlayer insulating film of silicon oxide (Col 3 Ln 66) and Arita teaches an electrode protection film of Ru, ruthenium oxide, or iridium oxide (Col 6 Ln 24). These materials are disclosed in the specification of the instant application as having properties such that the etching rate of Ru, ruthenium oxide, or iridium oxide is 25% or less with respect to silicon oxide. In reference to the claim language referring to the function of the electrode protection film as an etch stopper film, intended use and other types of functional language must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. In re Casey, 152 USPQ 235 (CCPA 1967); In re Otto, 136 USPQ 458, 459 (CCPA 1963).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ben P. Sandvik whose telephone number is (571) 272-8446. The examiner can normally be reached on Mon-Fri.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

bps


EVAN PERT
PRIMARY EXAMINER